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*Election of  
Species*

*Oldest  
Effective*

CLAIMS:

1. An enzymatically active medical article comprising:  
a medical article; and  
an enzyme disposed at or near a surface of said medical article, such that said medical article is provided with an enzymatically active surface,  
wherein said enzyme is selected from the group consisting of protease enzymes, glycosidase enzymes, enzymes that degrade cholesterol esters, enzymes that convert hydrocortisone to cortisone, enzymes that degrade oxalate, and enzymes that generate NO from arginine.
2. The enzymatically active medical article of claim 1, wherein said enzyme is a protease enzyme.
3. The enzymatically active medical article of claim 1, wherein said enzyme is an enzyme that degrades cholesterol esters.
4. The enzymatically active medical article of claim 3, wherein said enzyme is selected from cholesterol esterase and cholesterol oxidase.
5. The enzymatically active medical article of claim 1, wherein said enzyme is an enzyme that converts hydrocortisone to cortisone.
6. The enzymatically active medical article of claim 5, wherein said enzyme is a hydrocortisone esterase enzyme.
7. The enzymatically active medical article of claim 5, wherein said enzyme is a glycosidase enzyme.
8. The enzymatically active medical article of claim 7, wherein said enzyme is an  $\alpha$ -galactosidase enzyme.

10/131745

References from Spec:

- 6033719
- 6024918
- 4525456
- 6153252
- 5741331
- 5946899
- 69/734639

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9. The enzymatically active medical article of claim 7, wherein said enzyme is a  $\beta$  - galactosidase enzyme.

10. The enzymatically active medical article of claim 7, wherein said enzyme is a  $\beta$  - glucosidase enzyme.

11. The enzymatically active medical article of claim 1, wherein said enzyme is an enzyme that generates NO from arginine.

12. The enzymatically active medical article of claim 11, wherein said enzyme is nitric oxide synthetase.

13. The enzymatically active medical article of claim 1, wherein said enzyme is provided within a biocompatible, biostable matrix coating disposed on said medical article.

14. The enzymatically active medical article of claim 1, wherein said enzyme is attached to a surface of said medical article.

15. The enzymatically active medical article of claim 14, wherein enzyme is covalently attached to a surface of said medical article.

16. The enzymatically active medical article of claim 14, wherein said enzyme is attached to said surface of said medical article by ion exchange forces.

17. The enzymatically active medical article of claim 14, wherein said enzyme is attached to said surface of said medical article by antibody-antigen interactions.

18. The enzymatically active medical article of claim 14, wherein said enzyme is attached to said surface of said medical article by nucleic-acid hybridization.

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19. The enzymatically active medical article of claim 14, wherein said enzyme is attached to a surface coating on said medical device.

20. The enzymatically active medical article of claim 1, further comprising an enzyme-free coating layer provided over said enzyme, wherein said enzyme-free coating layer acts to hide said enzyme from immune surveillance.

21. The enzymatically active medical article of claim 1, wherein said medical article is a vascular medical device.

22. The enzymatically active medical article of claim 1, wherein said medical article is selected from a catheter, a guide wire, a balloon, a filter, a stent, a stent graft, a cerebral aneurysm filler, a vascular graft, a heart valve, a bandage and a bulking agent.

23. A therapeutic method comprising:  
providing the enzymatically active medical article of claim 1; and  
administering said medical article to a patient.

24. The therapeutic method of claim 23, wherein said medical article is a vascular medical device.

25. The therapeutic method of claim 23, wherein said medical article is selected from a catheter, a guide wire, a balloon, a filter, a stent, a stent graft, a cerebral aneurysm filler, a vascular graft, a heart valve, a bandage and a bulking agent.

26. The therapeutic method of claim 23, wherein said enzyme is an enzyme that converts hydrocortisone to cortisone and wherein said medical article is administered to a site of inflammation.

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27. The therapeutic method of claim 23, wherein said enzyme is an enzyme that generates NO from arginine and wherein said medical article is administered to a site within the vasculature to prevent restenosis.

28. The therapeutic method of claim 23, wherein said enzyme is an enzyme that acts upon cholesterol esters and wherein said medical article is placed adjacent atherosclerotic plaque within the vasculature to degrade the cholesterol ester deposits found in said atherosclerotic plaque.

29. The therapeutic method of claim 23, wherein said enzyme is a glycosidase enzyme effective to degrade ceramide trihexoside in the treatment of Fabray's disease and wherein said medical article is a blood contacting device.

30. The therapeutic method of claim 23, wherein said enzyme is a glycosidase enzyme effective to degrade glucocerebroside in the treatment of Gaucher's disease and wherein said medical article is a blood contacting device.

31. The therapeutic method of claim 23, wherein said enzyme is a glycosidase enzyme effective to degrade ganglioside GM2 in the treatment of Tay-Sach's disease and wherein said medical article is implanted within the cranium.

32. The therapeutic method of claim 23, wherein said enzyme is oxalate oxidase and wherein said medical article is a urinary catheter.